REMARKS

Status Of Application

Claims 1-6 are pending in the application; the status of the claims is as follows:

Claims 1, and 4-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,734,118 to Marechal et al. ("Marechal") in view of U.S. Application Publication No. US-2002/0053223 to Nishikawa ("Nishikawa").

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Publication No. 60-171231 to Shimizu et al. ("Shimizu") in view of U.S. Patent No. 3,900,328 to Parsons et al. ("Parsons"), Nishikawa, and Marechal.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1-6 under 35 U.S.C. § 103(a), as being unpatentable over Shimizu in view of Parsons, Nishikawa, and Marechal, is respectfully traversed based on the following.

Shimizu shows an enclosed mold for a lens including a bottom 1, a top 2, and an outer ring comprised of two pieces 3L and 3R. The top and bottom of the mold are pressed to the desired thickness of the lens and the excess material is pressed into an annular space formed between the top mold 2 and the outer ring. Shimizu does not discuss the temperatures of either the glass or the mold, but appears to be designed to mold glass below the transition temperature because the mold is an enclosed space and it is reasonable to assume that it would be noted if molten glass was used.

Marechal shows molds 1 or 20, and 2 or 21 for the surfaces of a lens. Molds 20 and 21 abut a ring 23. Together, these components form the mold for a glass lens. A precisely measured perform 9 or 26 is placed in the mold (col. 3, lines 56-58; col. 6, lines 32-45). The glass perform is heated to a malleable state by induction heating of the mold (col. 6, lines 13-

17 and 27-31). In all of the examples and in the summary, the mold and preform are heated to the same or a similar temperature.

Parsons shows heating glasslike carbon mold inserts 15 and 17 to a temperature of 530°C to 590°C, softening a cane 47 of optical crown glass to a temperature of 600°C to 700°C and pressing the mold inserts against the softened glass (col. 7, lines 6-25). As with Marechal, the glass and the mold are heated to a similar temperature.

Nishikawa shows that an optical element may be formed by dropping a micro glass molten droplet 8 onto a mold in a molten state (paragraph [0047]). There is no suggestion of any temperature parameters for this alternative step and no discussion of the nature of this mold; although two open type molds are shown in Figures 6 and 7. In the second embodiment, the flat mold 9 is heated to 400°C after the droplet was dropped onto the mold. It can only be presumed that the flat mold 9 was not heated prior to dropping the droplet 8.

In contrast to the cited references, claim 1 includes:

> An optical element manufacturing method, comprising:
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> a preparation step of preparing a lower mold having a lower mold surface for forming an optical function surface of an optical element to be manufactured and an upper mold having an upper mold surface for forming another optical function surface of the optical element, said lower mold having an outer shape restricting surface for the optical element or being combined with a member having the outer shape restricting surface, said upper mold being opposed to the lower mold;
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> a reference surface formation step of forming a positioning reference surface on a rim of the optical element by heating the outer shape restricting surface of the lower mold or combined with the lower mold and the lower mold surface and dropping molten glass onto the lower mold surface so as to collide with the lower mold surface and spread to be in contact with the outer shape restricting surface;
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> ...
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> wherein a temperature of the outer shape restricting surface in the reference surface formation step and the pressing step is higher than a temperature which is a difference when 100°C is subtracted from a glass transition temperature (°C) of the glass.

The processes of Shimizu, Marechal and Parsons begin with a solid glass. The glass is heated to become malleable and the molds are heated to a similar temperature to that of the glass. On the other hand, in Nishikawa the glass begins in the molten state. Control of temperatures and pressures is very different when starting with solid glass versus starting with molten glass. One skilled in the art faced with the problem of molding molten glass would not have looked to references describing a processes for molding solid glass because of the very different nature of the problems.

The Office Action states on page 6 that:

> Parsons et al. teach the heating of the mold to a temperature range of 530°C-590°C, and also a softening temperature of the glass around 600-700°C, which places the mold temperature substantially in the range of higher than 100°C less than the glass transition temperature.

This is correct, but only affirms the point that the mold and the softened glass are approximately the same temperature. There is nothing in any of the references that shows or suggests using a mold having a temperature *below* the transition temperature with molten glass, which obviously has a temperature *above* the transition temperature. Thus, there is no suggestion of "dropping molten glass onto the lower mold surface so as to collide with the lower mold surface and spread to be in contact with the outer shape restricting surface; ...wherein a temperature of the outer shape restricting surface in the reference surface formation step and the pressing step is higher than a temperature which is a difference when 100°C is subtracted from a glass transition temperature (°C) of the glass." To support an *prima facie* case of obviousness, the cited references, singularly or in combination, must show or suggest every limitation of the claim. MPEP §2143.03.

Furthermore, as stated above, one skilled in the art would not have combined a process steps from a process using molten glass with those of a process using glass below the transition temperature because the problems involved are very different and not compatible, and thus there is no reasonable expectation that these processes could be successfully combined. MPEP §2143.02. Thus, claim 1 is patentably distinct from the prior art.

Claims 2-6 are dependent upon claim 1, and thus include every limitation of claim 1. Therefore, claims 2-6 are also patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Shimizu in view of Parsons, Nishikawa, and Marechal, be reconsidered and withdrawn.

The rejection of claims 1, and 4-6 under 35 U.S.C. § 103(a), as being unpatentable over Marechal in view of Nishikawa, is respectfully traversed based on the following:

As noted above, the combination of Shimizu with Parsons, Marechal and Nishikawa does not show or suggest every limitation of claim 1. Thus, a subset of these references (Marechal and Nishikawa) also does not show or suggest every limitation of claim 1.

In addition, Marechal is a process for molding glass that is below the transition temperature. Nishikawa is a process using molten glass. As stated above, one skilled in the art would not have combined a process steps from a process using molten glass with those of a process using glass below the transition temperature because the problems involved are very different and not compatible. Thus, there is no reasonable expectation that these processes could be successfully combined. Therefore, the cited references do not support a *prima facie* case for obviousness of claim 1 and claim 1 is patentably distinct from the prior art. Claims 4-6 are dependent upon claim 1, and thus include every limitation of claim 1. Therefore, claims 4-6 are also patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claims 1, and 4-6 under 35 U.S.C. § 103(a) as being unpatentable over Marechal in view of Nishikawa, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Response does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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